LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1 to 14: (canceled).

15 (currently amended): A method of producing a high-strength hot-rolled steel sheet excellent in shape fixability comprising the following steps,

hot-rolling a cast slab ~~having a composition according to claim 7~~ as cast or cooled once,

said cast slab containing, in terms of weight %,

C: 0.02 to 0.3%,

at least one or more element selected from the group consisting of, total 0.1 to 3.5%, in terms of weight %,

Mn: 0.05 to 3%,

Ni: 3% or less

Cr: 3% or less,

Cu: 3% or less,

Mo: 1% or less,

Co: 3% or less and

Sn: 0.2% or less,

at least one or both of, total 0.02 to 3% in terms of weight %,

Si: 3% or less and

Al: 3% or less

and remainder Fe and unavoidable impurities,

then reheated to a range of 1000 to 1300°C, with a total reduction ratios of 25% or more at Ar_3 to (Ar_3+150)°C, temperature at finishing hot-rolling start, TFS,

and temperature at finishing hot-rolling end, TFE, and calculated residual strain $\Delta\varepsilon$ to simultaneously satisfy following relations (1) to (4), and

cooling hot-rolled steel sheet, then

coiling at below critical temperature T_0 determined by the chemical composition of the steel shown in the following relation (5) and a temperature of not more than 400°C:

$$TFE \geq Ar_3(°C) \quad (1)$$

$$TFS \leq 1100°C \quad (2)$$

$$\Delta\varepsilon \geq (TFS-TFE)/375 \quad (3)$$

$$20°C \leq (TFS-TFE) \leq 120°C \quad (4)$$

$$T_0 = -650.4 \times \{C\%/(1.82 \times C\% - 0.001)\} + B \quad (5)$$

where, B is found from the composition of the steel expressed by weight%,

$$B = -50.6 \times Mneq + 894.3$$

$$Mneq = Mn\% + 0.24 \times Ni\% + 0.13 \times Si\% + 0.38 \times Mo\% + 0.55 \times Cr\% + 0.16 \times Cu\% - 0.50 \times Al\% - 0.45 \times Co\% + 0.90 \times V\%$$

where,

$$Ar_3 = 901 - 325 \times C\% + 33 \times Si\% + 287 \times P\% + 40 \times Al\% - 92 \times (Mn\% + Mo\% + Cu\%) - 46 \times (Cr\% + Ni\%)$$

$\Delta\varepsilon$ is found from the equivalent strain εi (i is 1 to n) given at each stand of the n stages of finishing rolling for the rolling, time ti (sec) (i=1 to n-1) between stands, time tn (sec) from the final stand to the start of cooling, rolling temperature Ti(K) (i=1 to n) at each stand, and a constant R=1.987,

$$\varepsilon=\Delta\varepsilon 1+\Delta\varepsilon 2+\cdots+\Delta\varepsilon n$$

where, $\Delta\varepsilon i=\varepsilon i \times \exp\{-(ti^*/\tau n)^{2/3}\}$

$$\tau n=8.46\times10^{-9} \times \exp\{43800/R/Ti\}$$

$$ti^*=\tau n \times (ti/\tau i+t(i+1)/\tau(i+1)+\cdots+tn/\tau n\}.$$

Claims 16 an 17: (canceled).

18 (new): A method for producing a high-strength hot-rolled steel sheet excellent in shape fixability according to claim 15, characterized by said cast slab containing, in terms of weight %, at least one or more element selected from Nb, Ti and V with a total of 0.001 to 0.8%, in terms of weight %.

19 (new): A method for producing a high-strength hot-rolled steel sheet excellent in shape fixability according to claim 15 or 18, characterized by said cast slab further containing at the least of one or more element selected from the group consisting of, in terms of weight %,

P: 0.2% or less,

B: 0.01% or less,

Ca: 0.0005 to 0.005% and

Rem: 0.001 to 0.02%.

20 (new): A method of producing a high-strength hot-rolled steel sheet excellent in shape fixability according to claim 15 or 18, characterized by further controlling a friction coefficient to not more than 0.2 in at least one pass in the hot-rolling in a temperature range of Ar_3 to (Ar_3+150)°C.

21 (new): A method of producing a high-strength hot-rolled steel sheet excellent in shape fixability characterized by applying skin pass rolling of 0.1 to 5% to hot-

rolled steel sheet produced by the method of producing a high-strength hot-rolled steel sheet excellent in shape fixability according to claim 15 or 18.

22 (new): A high-strength hot-rolled steel sheet excellent in shape fixability produced by the method described in claim 15 or 18, wherein ferrite or bainite is the maximum phase in terms of percent volume,

satisfying all of the following at least at 1/2 of the sheet thickness:

(1) a mean value of X-ray random intensity ratios of a group of {100}<011> to {223}<110> orientations is 2.5 or more,

(2) a mean value of X-ray random intensity ratio of three orientations of {554}<225>, {111}<112>, {111}<110> is 3.5 or less,

(3) X-ray random intensity ratio of {100}<011> is larger than that of {211}<011>,

(4) X-ray random intensity ratio of {100}<011> is 2.5 or more,

having at least one of an r-value in a rolling direction and the r-value in a direction perpendicular to the rolling direction is 0.7 or less,

having anisotropy of uniform elongation ΔuE1 is 4% or less,

having an anisotropy of local elongation ΔLE1 is 2% or more, and

having an ΔuE1 which is ΔLE1 or less,

where:

$\Delta uE1=\{|uE1(L)-uE1(45°)|+|uE1(C)-uE1(45°)|\}/2$

$\Delta LE1=\{|LE1(L)-LE1(45°)|+|LE1(C)-LE1(45°)|\}/2$

uE1(L): Uniform elongation in a rolling direction

uE1(C): Uniform elongation in a transverse direction

uE1(45°): Uniform elongation in a 45° direction

LE1(L): Local elongation in a rolling direction

LE1(C): Local elongation in a transverse direction

LE1(45°): Local elongation in a 45° direction.

23 (new): A high-strength hot-rolled steel sheet excellent in shape fixability according to claim 22, characterized in that an occupancy rate of iron carbide, diameter of which is 0.2 μm or more, is 0.3% or less.

24 (new): A high-strength hot-rolled steel sheet excellent in shape fixability according to claim 22, characterized in that an aging index AI is 8 MPa or more.

25 (new): A high-strength hot-rolled steel sheet excellent in shape fixability according to claim 22, wherein ferrite or bainite is the maximum phase in terms of percent volume, and a percent volume of martensite is 1 to 25%.

26 (new): A high-strength hot-rolled steel sheet excellent in shape fixability according to claim 22, wherein the steel sheet is plated.